4: Stanmus D-5 (ca. 1909) 1910 FT7 Yao FT7
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METALLURGY.

Among the natives in Nyasaland, with the exception of copper in the north (Wahenga) and brass in parts near the Zambesi, iron was the only metal worked.

Other metals now used and obtained from traders are, copper, brass, lead, tin, etc. Iron = *ukôndo*; brass = *mpuli*; copper = *mkuwa*; of iron, hoes, axes, knives, spears were made.

At the present time copper- and brass-bound spears are still found at the north end of the lake; copper bracelets and body rings also. The brass wire bracelets elsewhere are made from imported metal. Iron-stone ore in the old days was smelted in a furnace of stones made in the form of a long drain 3 feet long and 1 foot high; in this a mixture of lumps of ore and wood charcoal was put, and single bellows of goats' skins were used to make the draught, which is aided by building a chimney at one end; at the other end a hole is made in the ground to receive the molten metal. A quantity of this is then again melted in a hole in the ground with a charcoal fire about it, and then the metal run into a trench to form a thin bar which is then hammered and worked into a spear, etc. At the present time little smelting of ore is done. There are regular metalworkers, who make knives, etc., using a little hearth with goat-skin bellows, a crucible for copper and brass, etc., tongs, pliers, hammer.

FIG. 13.

An iron plate with an aperture for drawing wire and files are also employed.

Bellows.—A goat's skin with a large opening sewn to two sticks; the bag is then held by these sticks and closed and pressed, the air being driven out through an iron tube inserted through one of the legs of the skin.

BOATS.

The only form of boat in use is the dug-out canoe without outriggers. No skins are used. These are punted along by bamboo poles in the rivers. On the lake paddles are used, never oars. There are no sailing craft. The *mpanga* is the tree used for making canoes, sometimes also the *mkuwa*. They are cut out with a small adze, *mtepo*. The *chiw* bush is used for caulking, twenty or thirty of the stalks being rammed into the hole. *Mpini*, a ground-creeper, is also used after being pounded. For baling anything is used. At Likoma a vessel like a very small canoe called *upe* is employed. A kind of raft made from pith-wood and called *mtepembwe* is used to fish from. Occasionally these get washed out into the lake and the fisher has been drowned.

The canoes vary in size from 10 to 50 feet and more, the smaller being used as ferry-boats across a stream; the largest were made to carry slaves across the Lake Nyasa in the old days. In punting a canoe, one or two men work, keeping time. In paddling, any number may work, the largest canoes have twenty men working on either side. Down river near Zambesi the paddlers kneel; on the Lake they stand.